

**Patent Claims**

*What is claimed is:*

- The vacuum*  
1. ~~Vacuum~~ cleaner blower (1) consisting of an electric drive motor (2) with  
a support cage (10) for receiving of the structural modules of the drive  
motor (2), such as stator pack (6), rotor (7) and brush holder (8) with  
carbon brushes (9) as well as an at least single stage blower unit  
driven by the motor and having a deflector (11), impeller (12) and  
suction hood (7), the deflector (11) being at the same time structured  
as a support cage cover with a bearing seat for the rotor (7),  
characterized by the fact that  
the support cage (10) is structured for mounting its structural modules  
in a direction extending axially of the blower as well as for direct  
contacting, the brush holders 8 of the carbon brushes 9 being provided  
in the area of the upper side (B) of the support cage which also faces  
the deflector (11). *Ref. P. 1111.*
- The vacuum*  
2. ~~Vacuum~~ cleaner blower of claim 1,  
~~characterized by the fact~~  
*wherein*  
that at its side facing the deflector (11) the support cage (10) is  
provided with a rim extending beyond the cage, that the flared rim (16)  
is provided with receptacles (17;27) at least for the brush holders (8) of  
the carbon brushes (9) and formed into it and open upwardly and  
towards the interior of the support cage (10) (16). *Ref.*
- The vacuum*  
3. ~~Vacuum~~ cleaner blower of claim 1 and 2,  
~~characterized by the fact~~  
*wherein*  
that openings (18) in the flared rim (16) of the support cage (10) extend  
into the wall (19) of the cage (10) for receiving protruding stator pack  
connectors (20). *Aut.*
- The vacuum*  
4. ~~Vacuum~~ cleaner blower of one or more of claims 1 to 3,

characterized by the fact  
wherein  
that the stator pack connectors (20) are directly contacted by the  
carbon brushes (9).

5 5. *The vacuum*  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 4,~~

characterized by the fact  
wherein  
that the brush holders (8) of the carbon brushes (9) are provided with  
brush holder connector pins (21) extending in the axial direction of the  
support cage (10) which contact the associated stator pack connectors  
(20) during placement of the carbon brushes (9) into the receptacles  
(17).

*only the  
brush  
structure*

6. *The vacuum*  
~~Vacuum~~ cleaner blower of claim 1 and 2,  
characterized by the fact  
wherein  
that at least one further receptacle (27) is formed in the flared rim (16)  
of the support cage (10) for receiving a plug-in component group  
*care may present*  
consisting of electrical components (28) for switching, control and/or  
safety functions of the suction blower drive motor (2).

20 7. *The vacuum*  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 6,~~  
characterized by the fact  
wherein  
that the electrical components (28) are arranged on a circuit board (29)  
insertable into the receptacle (27) and that during insertion of the  
circuit board (29) the stator pack connectors (20) are connected with it  
directly.

*Final  
assembly*

8. *The vacuum*  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 7,~~  
characterized by the fact  
wherein  
that the circuit board (29) is placed into an adaptor housing (31) which  
may be separately into the receptacle (27).

*functional*

*Assembly  
steps*

a  
a  
9. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 8,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ <sup>the</sup> at its <sup>top</sup> ~~bottom~~ side the receptacle (27) is provided with a socket  
opening (32) penetrating through the <sup>Ant.</sup> ~~wall~~ (19) of the support cage (10)  
for an external plug-in connection. <sup>Ant.</sup>

a  
a  
10. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 9,~~  
~~characterized by the fact that~~  
<sup>wherein an</sup>  
~~that the~~ adaptor housing (31) with completed circuit board (29) or the  
circuit board (29) itself is provided with connector pins (30a; 30b)  
extending in the axial direction of the support cage (10) for direct  
contacting <sup>with what?</sup>

a  
11. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 10,~~  
characterized by the fact  
that the connector pins (30a) of the adaptor housing (31) or of the  
circuit board 29 during insertion into the receptacle (27) contact  
associated stator pack connectors (20) and that further connector pins  
(30b) for external plug-in connection extend freely into the socket  
opening (32). <sup>Assembly steps</sup>

a  
a  
12. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 11,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the adaptor housing (31) may be inserted positively into the  
receptacle (27). <sup>10:1</sup> <sup>27</sup>

a  
a  
13. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 12,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the electrical components (28) on the circuit board (29) include a  
decoupling capacitor and a thermal switch for the suction blower drive  
motor (2). <sup>Ant.</sup>

14. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 13,~~<sup>10</sup>  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ a hold down bracket (33) for the stator pack (6) is formed on the  
adaptor housing (31).

15. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 14,~~<sup>10</sup>  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the adaptor housing (31) consists of a lower housing portion (31a)  
for receiving the circuit board (29) and a lid portion (31b) linked to the  
lower housing portion (31a).

16. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 15,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the lid portion (31b) is flexibly linked to the lower housing portion  
(31a).  
structure?

17. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 16,~~<sup>2</sup>  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the deflector (11) is centrically affixed to the flared rim (16).

18. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 17,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ for the mutual alignment of support cage (10) and deflector (11)  
one or more positively interfitting centering guides (22) are formed in  
the flared rim (16) of the support cage (10) and in the marginal portion  
at the lower side of the deflector (11).  
Ant. Ant.

19. <sup>The vacuum</sup>  
~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 18,~~  
~~characterized by the fact~~  
<sup>wherein</sup>  
~~that~~ the centering guides (22) are formed as pins, profiled protrusions,  
bores or the like.

*The vacuum*  
20. ~~A vacuum cleaner blower of one or more of claims 1 to 19,~~<sup>18</sup>

~~characterized by the fact~~

*wherein*

~~that~~ *assembly step* <sup>(</sup> at the lower side of the deflector (11) the brush holder receptacles (17) of the support cage (17) serve as centering counter pieces for the centering guides (22). *desired result* )

*The vacuum*  
21. ~~A vacuum cleaner blower of one or more of claims 1 to 20,~~

~~characterized by the fact~~

*wherein*

~~that~~ the centering guides (22) are formed as hold-down brackets for the brush holders (8). *desired result.*

*The vacuum*  
22. ~~A vacuum cleaner blower of one or more of claims 1 to 21,~~

~~characterized by the fact~~

*wherein*

~~that~~ *guides* the centering ~~pieces~~ as hold-down brackets are of U-shaped configuration.

*The vacuum*  
23. ~~A vacuum cleaner blower of one or more of claims 1 to 22,~~

~~characterized by the fact~~

*wherein*

~~that~~ the wound stator pack (6) is positively secured in the support cage (10).

*The vacuum*  
24. ~~A vacuum cleaner blower of one or more of claims 1 to 23,~~

~~characterized by the fact~~

*wherein*

~~that~~ the support cage (10) is formed with support braces (24) and/or receptacles (25) positively complementing the contour of the stator, for the stator pack (6).

*The vacuum*  
25. ~~A vacuum cleaner blower of one or more of claims 1 to 24,~~

~~characterized by the fact~~

*wherein*

~~that~~ the support cage (10) is formed with a support cage bottom (15) realizing suction air exits and for receiving a rotor bearing.

*housing*

*desired result.*

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26. <sup>The vacuum</sup> ~~Vacuum~~ cleaner blower of ~~one or more of claims 1 to 25,~~

~~characterized by the fact~~

a  
<sup>wherein</sup>

~~that~~ at least the support cage (10) and the deflector (11) are made of a  
non-metallic material, especially plastic.

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